Proration and Preclude Issues with Lower Water Levels

I. Elevation Levels Needed for Securing Water Intakes and what this means for System Storage (MAF)

Reservoir	Intake Problems	Which intakes	Intake Shutdowns	Popn Affected	MAF Required to Maintain
Ft. Peck	No Information				
Garrison	1816	Garrison	1797	1830	40 MAF
	1816	Twin Buttes/Mandaree	1796	3035	
	1816	White Shield/ Four Pears/Parshall	1797.5	6538	
Oahe	1580	Mni Waste'	1561.9	14,000	40 MAF
	River Condition	Ft. Yates	River Condition	17,408	
	1569	Wakpala	1565	62,908	31 MAF
	1555	MidDakota RW	1540	92,908	
	1547	Mobridge	1547	46482	
Big Bend	1421	Lower Brule/Crow Creek	1419	4,150	OK
Ft. Randall	1340	Oacoma	1337	390	OK
	1335	Aurora –Brule RWS	1332	5,390	OK
	1329	Randall-Platte	1324.5	?	OK
	1324.5	Chamberlain	1321	?	OK
	1316	Randall - Pickstown	1311	?	OK

II. Reservoir Elevation Levels Needed for Securing Crucial Sacred, Cultural, Historic, and Burial Sites.

Reservoir	Critical Sites Protection Level	MAF Required on No New Exposure	No New Exposure Level	MAF Required for Critical Site Protection	Total Reservoir Storage
Ft. Peck	2218	44 MAF	2205	40 MAF	
Garrison	1826	47 MAF	1820	40 MAF	
Oahe	1591	44 MAF	1580	40 MAF	
Big Bend	Not above 1521		1519		
Ft. Randall	?				
Gavins Point	?				

III. Reservoir Elevation Levels/ Timing Needed for Spawning/Fisheries/ Timing of Releases on Each Reservoir and Impacts of Timing

Reservoir	Spawning	Timing of Spawning	Elevation Level Impacts Start	MAF Required	Needs in Spawning Period
Ft. Peck	All species	May 1-June 30	Not Applicable		3 ft. Rise
Garrison	All species	April 14-May 31	1830	50 MAF	Rising
Oahe	All species	April 7-May 31	1590	44 MAF	Rising
Big Bend					

IV. Proration Recommendations on the Curve of Pro-ration and the impacts of pro-ration on the Reservoirs.

#1 Preclude is at 40 MAF – Absolute

#2 Pro-Rate High

	Release Timing	Runoff Level (May 1) (Rise #2)	MAF Level (Rise 1 & 2)	Elevation Level	# Years Avg Occurrence	
Upper Preclude			58.5MAF At any time			No Rise
High Storage		Above High Q. (25% - 30.6 MAF)	Above 50 MAF			150%
High Storage		Median Q. (50% 25 MAF)	Above 50 MAF		75%	1.3 MAF
High Storage		Median to Lower Q. (25% -19 MAF)	Above 50 MAF			50% Reduction
High Storage		Below Lower Q. (Less than 19 MAF)	Above 50 MAF			75% reduction
High Pro-rate		Above High Q. (25% - 30.6 MAF)	49-47F			150% increase
High Pro-rate		Median Q. (50% 25 MAF)	49-47F			.6
High Pro-rate			49-47F			50% decrease
High Pro-rate		Below Lower Q. (Less than 19 MAF)	49-47F			75% decrease
Middle Pro-Rate		Above High Q. (25% - 30.6 MAF)	47-40 MAF			150% increase
Middle Pro-Rate		Median Q. (50% 25 MAF)	47-40 MAF			.6 MAF
Middle Pro-Rate		Median to ower Q. (25% -19 MAF)	47-40 MAF			50% Reduction
Middle Pro-Rate		Below Lower Q. (25% -19 MAF)	47-40 MAF			No Rise
Preclude			40 MAF		10%	None

V. Additional Sidebars to Consider

Ft. Yates Intake Berm Protection – This must be monitored especially the rate of releases to make sure the berm is not damaged that protects this intake.